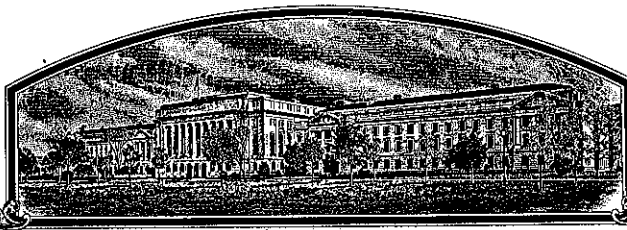


No.

9500190



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Northrup King Company*

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S00-66'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of August in the year of our Lord one thousand nine hundred and ninety-six.

Attest:

*Marsha G. Hunter*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Don Glickman*

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

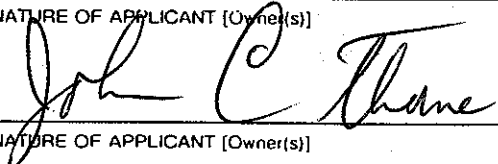
1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Northrup King Co.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.		3. VARIETY NAME S00-66	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) P. O. Box 949 Washington, Iowa 52353-0949 Attention: Dr. John C. Thorne		5. PHONE (include area code)		FOR OFFICIAL USE ONLY	
6. GENUS AND SPECIES NAME Glycine max		7. FAMILY NAME (Botanical) Leguminosae		PVPO NUMBER 9500190	
8. CROP KIND NAME (Common Name) Soybean		9. DATE OF DETERMINATION September, 1989		Filing and Examination Fee: \$ 2450.00 Date May 19, 1995	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				Certificate Fee: \$ 300.00 Date July 12, 1996	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION 1976		Filing and Examination Fee: \$ 2450.00 Date May 19, 1995	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. John C. Thorne Northrup King Co. P. O. Box 949 Washington, Iowa 52353-0949					

PHONE (include area code): 319-653-6645

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)	
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety d. <input type="checkbox"/> Exhibit D, Additional Description of Variety e. <input type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____ g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"	
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input checked="" type="checkbox"/> NO (If "NO," skip to item 18 below)	
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____). <input checked="" type="checkbox"/> NO	
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) Canada, January, 1992; U.S., March, 1995 <input type="checkbox"/> NO	
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.	

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)] 	CAPACITY OR TITLE Soybean Research Director	DATE 5-5-95
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

## EXHIBIT A

### Origin and Breeding History of the Variety

The soybean variety 'S00-66' is derived from a single F6 plant from the cross 'B117' x 'Bicentennial'. The cross was made in the summer of 1986 at the Northrup King Research Center at Washington, Iowa. The F1 and F2 were grown at the Northrup King Research Center at Waimea, Kauai, Hawaii, in the winter of 1986-87; the F3 at the Northrup King Research Center at London, Ontario, in the summer of 1987; the F4 and F5 at Waimea in the winter of 1987-88, and the F6 at London in the summer of 1988. The F1 was bulk harvested. The F2 through F5 generations were advanced by harvesting 2-4 seeds per plant and planting 600 seeds from the resulting bulk. In the fall of 1988, single F6 plants were selected and threshed individually. The progeny from these plants were planted in a preliminary yield trial at London in 1989. One of these, numbered C304736, was selected based on yield and agronomic characteristics for further testing. This line was subsequently tested under the temporary designation X93005 and named S00-66. It has been tested at several northern U.S. and Ontario locations from 1990 through 1994 and found to yield well compared to other Group 00 varieties. Descriptive characteristics including purple flowers, tawny pubescence, brown pods, and brown hilum (may contain up to 2% other hilum color) have been identified and confirmed. S00-66 has been tested in the field for iron deficiency chlorosis and found to be moderately resistant. It has been tested for reaction to races 1, 3, 4 and 7 of *Phytophthora sojae* using hypocotyl inoculation of field grown plants and found to carry the Rps1-a gene for resistance.

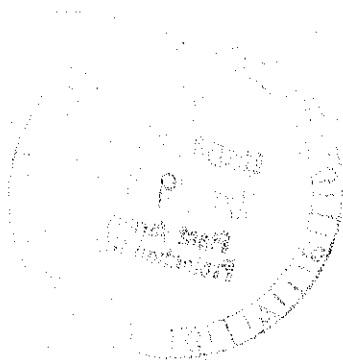
In the winter of 1990-91, 500 seeds of S00-66 was grown at Waimea and 100 plants harvested and threshed individually. The progeny of these plants were grown at London to monitor variability and to produce Pedigree Seed. These rows were uniform and true to type, so all rows were bulked to produce Pedigree Seed. This seed was increased in the winter of 1991-92 in Chile and again in the summer of 1992 near London to produce Breeder Seed. The Breeder Seed Increase was carefully rogued during flowering and at maturity. A few plants which did not conform to the variety description were removed. These were assumed to have come from mechanical mixture.

Foundation Seed of S00-66 was produced in 1993 and 1994 in Ontario. Foundation Seed in the U.S. will be grown from this seed source.

S00-66 is stable and uniform. No variants have been observed over 5 years of testing and 4 cycles of seed increase. Any off-type plants removed from increase fields were assumed to have arisen from admixture or outcrossing. Varietal purity will be maintained using progeny rows as described previously as needed for the life of the variety.

**EXHIBIT B****Novelty Statement for the Variety**

S00-66 is most similar to Maple Glen and KG 41. It can be differentiated from these varieties on the basis of hilum color. Seeds of S00-66 have brown hila, while seeds of Maple Glen and KG 41 have yellow hila.



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705




EXHIBIT C  
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Northrup King Co.	TEMPORARY DESIGNATION	VARIETY NAME S00#66
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 949 Washington, Iowa 52353-0949		FOR OFFICIAL USE ONLY PVPO NUMBER 9500190

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., ).

## 1. SEED SHAPE:

<input type="text" value="2"/>			
	1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)	2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)	4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)
	3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)		

## 2. SEED COAT COLOR: (Mature Seed)

<input type="text" value="1"/>	1 = Yellow	2 = Green	3 = Brown	4 = Black	5 = Other (Specify) _____
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## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

<input type="text" value="1"/>	1 = Dull ('Corsoy 79'; 'Braxton')	2 = Shiny ('Nebsoy'; 'Gasoy 17')
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## 4. SEED SIZE: (Mature Seed)

<input type="text" value="1"/> <input type="text" value="8"/>	Grams per 100 seeds
---	---------------------

## 5. HILUM COLOR: (Mature Seed)

<input type="text" value="3"/>	1 = Buff	2 = Yellow	3 = Brown	4 = Gray	5 = Imperfect Black	6 = Black	7 = Other (Specify) _____
	May contain up to 2% other hilum color.						

## 6. COTYLEDON COLOR: (Mature Seed)

<input type="text" value="1"/>	1 = Yellow	2 = Green
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## 7. SEED PROTEIN PEROXIDASE ACTIVITY:

<input type="text" value="2"/>	1 = Low	2 = High
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## 8. SEED PROTEIN ELECTROPHORETIC BAND:

<input type="text" value="1"/>	1 = Type A (SP1 <sup>a</sup> )	2 = Type B (SP1 <sup>b</sup> )
--------------------------------	--------------------------------	--------------------------------

## 9. HYPOCOTYL COLOR:

<input type="text" value="4"/>	1 = Green only ('Evans'; 'Davis')	2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
	3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')	
	4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')	

## 10. LEAFLET SHAPE:

<input type="text" value="3"/>	1 = Lanceolate	2 = Oval	3 = Ovate	4 = Other (Specify) _____
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11. LEAFLET SIZE:

☐ 1

1 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 2

1 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 2

1 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

☐ 2

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

☐

Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

☐ 1

Bacterial Blight (*Pseudomonas glycinea*)

☐

Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

☐ 1

Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojae*)

☐

Race 1

☐

Race 2

☐

Race 3

☐

Race 4

☐

Race 5

☐

Other (Specify)

☐

Target Spot (*Corynespora cassiicola*)

☐ 2

Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

☐

Powdery Mildew (*Microsphaera diffusa*)

☐

Brown Stem Rot (*Cephalosporium gregatum*)

☐

Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

☐ Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)

☒ 1 Purple Seed Stain (*Cercospora kikuchii*)

☐ Rhizoctonia Root Rot (*Rhizoctonia solani*)

Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)

☒ 2 Race 1 ☒ 2 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☒ 1 Race 5 ☒ 1 Race 6 ☒ 1 Race 7

☒ 1 Race 8 ☒ 1 Race 9 ☐ Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

☐ Bud Blight (Tobacco Ringspot Virus)

☐ Yellow Mosaic (Bean Yellow Mosaic Virus)

☐ Cowpea Mosaic (Cowpea Chlorotic Virus)

☐ Pod Mottle (Bean Pod Mottle Virus)

☐ Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)

☒ 1 Race 1 ☒ 1 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☐ Other (Specify) \_\_\_\_\_

☐ Lance Nematode (*Hoplolaimus Colonus*)

☐ Southern Root Knot Nematode (*Meloidogyne incognita*)

☐ Northern Root Knot Nematode (*Meloidogyne Hapla*)

☐ Peanut Root Knot Nematode (*Meloidogyne arenaria*)

☐ Reniform Nematode (*Rotylenchulus reniformis*)

☐ OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☒ 2 Iron Chlorosis on Calcareous Soil Moderately Resistant

☐ Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ Mexican Bean Beetle (*Epilachna varivestis*)

☐ Potato Leaf Hopper (*Empoasca fabae*)

☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Agassiz	Seed Coat Luster	S00-88
Leaf Shape	A.C. Harmony	Seed Size	KG41
Leaf Color	S00-88	Seed Shape	S00-88
Leaf Size	A.C. Harmony	Seedling Pigmentation	S00-88

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	122	2.3	79	6.3	9.4	41.3	20.4	17.6	
KG41 Name of Similar Variety	125	1.9	75	6.3	10.3	40.2	21.6	17.3	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.



**EXHIBIT E****Statement of the Basis of Applicant's Ownership**

Soybean variety S00-66 was developed from germplasm sources cited in Exhibit A of this application. Northrup King Co. believes that the variety is novel as defined in the Plant Variety Protection Act and, therefore, that Northrup King is the sole owner of the variety.